UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

HSRL-6J

Friday, 25 February 1994

Tim Tedesco
375 AW/EM
701 Hanger Road
Scott Air Force Base, IL 62225-5035

Re: **Review of the Draft Chemical Data Acquisition Plan and Work Plan for Multi-Site Preliminary Assessment/Site Investigation (hereinafter "the CDAP") for Scott Air Force Base, St. Clair County, Illinois.**

Dear Mr. Tedesco:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA), Section 309 of the Clean Air Act and Executive Order 12088, we have reviewed the above referenced document for Scott Air Force Base, St. Clair County, Illinois.

In general, the CDAP appears to address the primary objectives of Preliminary Assessments (PAs) and Site Investigations (SIs). However, it is to be noted that the PAs and SIs will not be sufficient to support any Decision Documents of no further action since the investigations are limited in scope. In addition, the U.S. EPA is concerned with the Quality Assurance/Quality Control (QA/QC) procedures and recommends the inclusion of Standard Operating Procedures for all of the field equipment and laboratory methods in this report. It would also be useful if a comprehensive site specific description of soil and ground water conditions be included in this report. Enclosed with this letter, you will find U.S. EPA comments and recommendations to be considered as you revise this report.

Thank you for the opportunity to provide comments on this document. If you have any questions, please contact me: (312) 886-0850.

Sincerely,

Laura J. Ripley
Federal Facilities Project Manager

Enclosure

cc: Brian Culnan, IEPA.
Ted Lietzke, WWES.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
COMMENTS

**Draft Chemical Data Acquisition Plan
and Work Plan for Multi-Site Preliminary Assessment/Site Investigation
for Scott Air Force Base, St. Clair County, Illinois.**

GENERAL COMMENTS

- Please update the table of contents and the schedule for PA/SI Deliverables (Table 1.3).

- The overall quality of the figures presented in the CDAP could be improved by making certain that the figures show the same site features that the text describes. In addition, the legends on the figures should be more comprehensive. U.S. EPA recommends that a full set of Area of Concern (AOC) figures be included in Section 1. Specific comments and suggestions regarding figures are provided throughout this review.

- The CDAP often refers to previous work performed by Environmental Resources Management, Inc. (ERM, 1992). Additional supportive evidence and a comprehensive description of soil and ground water conditions anticipated at each AOC should be presented in this document.

- U.S. EPA Region 5 normally requires that the Work Plan (WP), Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) be stand-alone documents. However, given the time constraints of this review, we reviewed the CDAP only on the basis of its technical adequacy. In the future, we request the WP, FSP and QAPP be stand-alone documents following U.S. EPA Guidance for Conducting Remedial Investigations and Feasibility Studies and U.S. EPA Region 5 Model for Quality Assurance Project Plans.

- In order to insure QA/QC, the laboratory SOPs and field equipment SOPs should be included in the CDAP.

SPECIFIC COMMENTS

Section 1 Introduction

Page 1-1, Section 1.1 Objective - The document states that 'The objective of this project is to conduct Preliminary Assessments (PAs) at 12 AOCs [Areas of Concern] and one IRP [Installation Restoration Program] site not previously investigated." The CDAP, however, presents only Site Investigation plans for only 10 AOCs. Where are the remaining two AOCs and the IRP site addressed? Please clarify the objectives of the CDAP.

Page 1-5, Table 1.2, Data Quality Objectives, Scott AFB PA/SI Work Plan - Since Scott AFB is a non-National Priority Listed federal facility, DQO Levels should follow Illinois EPA requirements.

The U.S. EPA feels that since limited investigations will be conducted at each AOC, that additional investigations will be required to support any decision of No Further Action.

Page 1-7, Figure 1.2, PA/SI Evaluation, Scott AFB, Illinois - Please provide more detail than currently included on the Base Map. Features discussed throughout the CDAP, including streets and other major location features, such as the "Golf Course", the "NCO Housing", the "Base Industrial Areas", the "Officer Housing West", etc. are currently not shown on the figure. Also, the eastern boundary of the base is not shown on the figure.

Page 1-9, Section 1.5.4 Physiography - Please include a topographic map of the site to correspond to the discussion in this section.

Page 1-9, Section 1.5.5 Surface Water - Please provide a map which clearly identifies all of the surface water features and their flow directions as described in this section.

What is the IEPA water use classification for Scott Lake and Mosquito Creek?

Does Mosquito Creek join Silver Creek at the southeast corner of the base as described in the last paragraph of this section? The 1991 USGS Lebanon, IL, quadrangle does not appear to show this relationship.

Page 1-10, Section 1.5.6 Regional Geology and Soils - Please provide a generalized stratigraphic column and surface soils map for Scott AFB to supplement this discussion. There appears to be discrepancies in the CDAP as to the thickness of the unconsolidated sediments. This section reports that the unconsolidated materials at the base range from 50 feet to 100 feet. However, Section 1.5.7 states "The uppermost bedrock units at Scott AFB are 85 to 350 feet below the surface...". Please resolve and provide references to substantiate.

Page 1-12, Section 1.5.7 Regional Hydrogeology - This section intermingles both regional and site specific hydrogeologic information, presumably because of the lack of more site specific information. This causes some discrepancies, however. For example, on one hand, this section implies that regionally, the bedrock and unconsolidated aquifers are infrequently used as potable water sources. In the immediately vicinity of the base, however, they "...are often used locally as a source of potable water." Please provide a figure showing the locations of water supply wells (industrial, commercial, municipal, agricultural, and residential) in the vicinity of the base (1 to 2 mile radius).

Page 1-13, Ground Water Quality and Use - "Ground Water Quality and Use" (page 1-13), the CDAP states "No drinking water wells are known to be in use on the installation. In

the past, wells have been drilled for drinking water." Have these past on-site wells been properly abandoned? Again, please provide a figure showing water supply wells (see previous comment).

Page 1-13, Section 1.6 Site Specific Descriptions - As noted in the General Comments Section of this review, a set of figures depicting each AOC and each oil/water separator site should be included in Section 1. Refer to the General Comment regarding figure quality. Please be certain that the text descriptions of each AOC is accurately depicted by the site diagrams. Comparisons of text descriptions in Section 1 to the site figures provided in Section 3 revealed discrepancies as noted throughout this review.

Page 1-13, Section 1.6.1 Low Level Radioactive Waste Site (AOC 1) - The 1991 USGS Lebanon, IL, topographic quadrangle depicts a "campground " in the vicinity of AOC 1. How close to the campground is this AOC and is this a concern?

Page 1-15, Section 1.6.2 Waste Water Treatment Plant Sludge Drying Beds (AOC 4) - The description of this AOC indicates that new facilities have been constructed on part of the grounds where the former beds were located. What is the nature of these new facilities?

Pages 1-16 - 1-20, Section 1.6.4 Oil/Water Separators Basewide (AOC 6) - The introductory paragraph to Section 1.6.4 is very general. In total, how many oil/water separators are located at Scott AFB? Were all existing oil/water separators inspected? Are the terms "visual inspection " and "survey" synonymous? Please clearly present the criteria used to judge the level of environmental risk associated with the oil/water separator sites in this section.

Please provide detailed diagrams of each oil/water separator site. The diagrams should include existing features (the separator, associated USTs, floor drain systems, etc.) and past features (removed USTs, for example).

Please clarify which of the oil/water separator sites have an associated auxiliary oil underground storage tank (UST) and which do not. Several of the discussions regarding the USTs are confusing. For example, Bldg. 548 (page 1-18) reportedly *has* an auxiliary 500-gallon UST which *was* moved to the site about 10 years ago. However, 'This tank and about 75 cubic yards of contaminated soil was removed in the summer of 1993". Does a UST still exist at Bldg. 548? Please clarify what is meant by 'No residual contamination remained in the soil at closure (ATEC, 1993). Was sampling performed? If so, please provide the environmental sampling results.

For those oil/water separator sites at which USTs have been previously removed, please provide a brief summary of the environmental sampling results. This information is provided, in part, for several of the UST removals performed in 1993 (Bldgs. 45, 548) but is not provided for others (Bldgs. 1989, 3184).

Why do four of the referenced twelve oil/water separator sites not represent "much of" or "a significant" threat to the environment? Is "No Further Action" recommended at these four sites (Bldgs. 433, 1988, 3286, 3674)?

There is a discrepancy between the oil/water separator locations described in the Health and Safety Plan and the CDAP. On Pages 3 - 5 of the Health & Safety Plan, nine oil water separators are listed (Bldgs. 45, 53, 433, 548, 742, 1989, 3172, 3184 and 3680) although the text states that "Eight oil/water separators will be investigated..." Is Bldg. 3680 of the Health & Safety Plan the same as Bldg. 3670 of the CDAP?

Page 1-17, Figure 1.4 Location of Oil/Water Separators Basewide, AOC 6 - Please add the base storm water sewer system to this figure and highlight the surface water features, including drainage direction.

Page 1-18, Building 433 - CAMS Wash Rack Area - Is an investigation planned for Bldg. 433? If not, please delete from the Health & Safety Plan. Also, the Health & Safety Plan mentions the possibility that solvents are present at this location. Is this a concern or not?

Page 1-19, Building 1988 - Car Wash - Is there a possibility that solvents were used in Bldg. 1988 - Car Wash?

Page 1-19, Building 1989 - Hobby Shop - The oil/water separator (*inside* the building) and its associated UST (on the *south* side of the building) appear to exist at different locations at Building 1989 - Hobby Shop. However, the discussion of Building 1989 in Section 3.2.4 (page 3-15) states that "The separator and a former UST were located on the *north* side of this building." Please clarify the actual location of these features. In addition, a new aboveground tank was installed on the west side of the building (in 1993?). Which location is the document referring to when stating (on page 1-19) that "Environmental sampling appears warranted at *this* location..."? In Section 3.2.4 and Figure 3.8 (page 3-22) investigators plan to install one soil boring to evaluate this separator site. Given the apparent uncertainty of this site, will one soil boring adequately investigate?

Page 1-19, Building 3172 - Fire Training Area No. 3 - U.S. EPA agrees that an evaluation of the oil/water separator at Building 3172 - Fire Training Area No. 3 is warranted. Is the referenced oil/water separator at this site "inactive" (is the fire training area still in use?)? What type of fuel recovery system was installed in the fire training area in 1979? Is Fire Training Area No. 3 currently under investigation as an IRP site? If so, please reference. Also, there appears to be a discrepancy in the investigator's understanding of activities at Fire Training Area No. 3 which could impact the proposed investigation of the oil/water separator at Building 3172 and the east-adjacent AOC 12 - CE Storage Yard. On page 1-19, the CDAP indicates that typical burns at Fire Training Area No. 3 involved approximately 900 gallons of fuel and were conducted two to three times per

times per quarter over a ten year period prior to installation of an unburned fuel recovery system in 1979. Therefore, over *100,000 gallons* of fuel may have been released at this site prior to 1979. However, on page 1-22 (last paragraph) the CDAP states that past training activities at Fire Training Area No. 3 released approximately *900 gallons* of fuel. Which estimate is correct, and how does this impact the evaluation of Building 3172 and the CE Storage Yard? Also, what type of "test" was performed on the waste tank (first complete sentence on page 1-20)?

Page 1-20, Building 3286 - Recycling Building - What types of materials were placed in the "concrete separator box" during operations at this AOC?

Page 1-20, Building 3674 - MARC Training - What operations were involved with "MARC Training" at Building 3674? Again, what type of materials were placed in the concrete separator box? In the last sentence of this paragraph, "treat" should read "threat".

Page 1-20, Building 3670 (or 3680) - Army Reserves Motor Pool - The discussion for Building 3670 states that the oil/water separator is located on the northeast side of the building, yet Figure 3.11 (Page 3-26) shows the separator on the northwest side of the building. Please verify the locations of the separator and edit the applicable text.

At the end of this discussion is a sentence beginning with "Based upon this review..." This is a general comment for all the oil/water separators and should be a separate paragraph.

Page 1-21, Section 1.6.5 Golf Course Maintenance/Entomology Lab, Building 1197 (AOC 7) - Is the referenced insecticide mixing area gravel surfaced? Is this mixing area the only site at which chemicals were handled, or do other areas warrant investigation (receiving/storage)?

Page 1-21, Section 1.6.6 Abandoned Gas Station, Old Housing Area (AOC 8) - Were the former USTs abandoned in-place or removed? Although interviews indicate that repairs were not performed at the former station, investigators should consider testing for the presence of solvents in addition to petroleum compounds.

U.S. EPA agrees that remote sensing should be performed in an effort to locate the former USTs; however, investigators should plan further evaluation methods such as a passive soil vapor survey in the event that the remote sensing survey is inconclusive.

What is meant by "shallow" soil samples? Any soil sampling scheme should include samples from below the base of the suspect USTs as surface soil samples may not be useful.

Pages 1-21 and 1-22, Section 1.6.7Spill Site No. 1 Building 3191 (AOC 9); Section 1.6.8 Spill Site No. 2 Building 45 (AOC 10) - Please include key site features from each of

these past spill sites on the requested site diagrams. In particular, indicate the location of receptor drainage ditches, berms, USTs, pipelines, etc.

At Spill Site No. 1, the CDAP states "Since the UST has been removed, there is little evidence of a spill". Please summarize the UST removal results and provide analytical data from samples collected during removal, if any.

Page 1-22, Section 1.6.9 CE Storage Yard (AOC 12) - The CDAP states that the CE Storage Yard was built through in-filling with "concrete rubble and other inert fill," yet, in the last paragraph, this fill material is discussed as a possible source of contamination. Please clarify.

Page 1-23, Section 1.6.10 Hangar 2 (Balloon Hangar) (AOC 13) - AOC 13 is a former oil/water separator site. Please provide a summary of the environmental sampling presumably performed during removal of the former oil/water separator and contaminated soils in 1993. A site map showing the mis-identified Balloon Hangar and AOC 13 would be helpful - the description in the first paragraph is difficult to follow.

Page 1-24, Table 1.3 Schedule for PA/SI Deliverables - Please update this schedule.

Section 2 Project Organization and Responsibility

Page 2-4, Section 2.4 Laboratory Services - The selected analytical laboratory is not a CLP laboratory.

Section 3 Field Operations

Page 3-1, Section 3.1.1 Soil Borings - Please specify how soil borings be abandoned.

Investigators plan to collect split spoon samples at two-foot intervals to 10 feet below grade, followed by five-foot intervals to the base of each boring. At several AOCs, investigators intend to finish borings two feet into clay layers which are at least two feet thick (see Soil Boring No. 2 (AO4-SBO2) on page 3-8). Will the proposed five-foot sampling interval allow for recognition of these target clay layers?

Page 3-2, Section 3.1.2 Geotechnical Sampling - Please add that field instrument calibration records will also be recorded in the field logbooks.

Page 3-2, Section 3.1.3 Headspace Screening - The headspace screening methodology described in the text conflicts with the methodology described in the referenced Appendix D. Please remedy. U.S. EPA recommends that soil samples be warmed prior to headspace screening. Also be aware that in cold temperatures, the PID can be unreliable.

Page 3-3, Section 3.1.4 Hydropunch for Ground Water Sampling - U.S. EPA is concerned regarding the use of a hydropunch for ground water sampling given the fine-grained nature of the soils beneath the site. Our experience has been that the hydropunch may generate very "muddy" or turbid samples, particularly with the use of a 40 slot screen as specified in he CDAP. In silty materials, we recommend a 7 slot screen. Be aware that analytical results of very turbid samples may bias high as a result of contaminants adhering to soil particles. Additionally, a polypropylene screen may not be inert in the presence of contamination. Is there a ground water sampling contingency plan in the event that this method does not work?

Please provide a diagram of the hydropunch tool to be used.

Page 3-4, Section 3.1.6 EM Conductivity Survey - The AOC(s) at which the geophysical survey is proposed should be stated. In addition, U.S. EPA suggests that a magnetometer survey followed by a ground penetrating radar (GPR) survey may be better able to locate USTs versus an EM survey. If investigators choose to continue with the EM, the grid spacing should be decreased to 5 foot intervals. Continuous profiling in the in-phase mode should be sufficient to detect USTs if present.

Page 3-5, Section 3.2 Sampling Locations - Throughout Section 3.2, there are references to findings by Environmental Resources Management, Inc. (ERM, 1992) at "nearby" sites previously investigated by ERM. Please specify the actual distance between AOCs to be investigated under this CDAP, and those referenced ERM sites. How valid are the analogous ERM sites? (Are the AOCs and referenced ERM sites situated in similar geologic and hydrogeologic settings? Are surface soils similar? etc.)

A detailed description of Scott AFB hydrogeology is necessary to evaluate the proposed sampling locations. Specifically, the CDAP makes numerous references to "upgradient" and "downgradient" soil boring locations, but provides no documentation to support the presumed interpretation of ground water flow. The presume ground water flow direction should be indicated on each AOC figure. Also, do investigators understand the uppermost aquifer to be confined, semi-confined or unconfined? How many aquifers exist in the unconsolidated sediments beneath the base (at least two are implied by the CDAP)? In the meeting of January 12, 1994 between Scott AFB, IEPA, and U.S. EPA, the uppermost aquifer was discussed and a consensus reached that there was only one aquifer in the unconsolidated sediments. The CDAP refers to a "confining layer" several times. Please describe the extent and thickness of any confining layers.

As previously requested in the comments, please provide more information on the accompanying AOC figures. All symbols should be consistent from figure to figure (for example, the same symbol represents a surface soil boring (performed with a hand auger) on Figure 3.2 and a soil boring (performed with a drill rig) on Figure 3.3). Also, all features mentioned in the text should be presented on each figure (berms, creeks, ditches, overhead pipelines, USTs, roads, referenced ERM sites, etc.).

Will the proposed soil analyses for samples collected at the oil/water separator sites (AOC 6) and the abandoned gasoline station (AOC 8) meet IEPA requirements for investigations of LUST sites (February, 1993)? If so, please state, and be aware that IEPA sampling requirements call for separate analysis for benzene (in addition to BTEX) and that soil sample analysis for lead must be performed by TCLP.

Will the water samples collected for metals analysis be filtered?

What is the purpose for sampling soils at or immediately below the ground water interface at several of the AOCs?

What is the purpose for collecting two soil samples for biological activity (AOC 5 and AOC 9)? Would it be useful to collect soil samples for biologic activity at the remaining AOCs?

Please review all tables in Section 3 for soil sample designation errors (for example, duplicate sample designations in Tables 3.1, 3.2 and 3.3 appear in error).

Page 3-8, Section 3.2.2 Waste Water Treatment Plant Sludge Drying Beds (AOC 4) - ERM (1992) found ground water flow in this area to be inconsistent. Did investigators take this into consideration during design of the investigation? On Page 1-15, Section 1.6.2, the CDAP states that "Drainage from these drying beds was collected in a subsurface sand layer and piped back to the inlet of the plant." U.S. EPA recommends that this sand layer also be targeted for evaluation.

Page 3-9, Figure 3.2 Waste Water Treatment Plant Sludge Beds AOC-04 - Please show the former bed locations on this figure. Also, what is the nature of the "Hazardous Storage" building depicted on this figure?

Page 3-10, 2nd complete paragraph, 1st incomplete paragraph - The statement is made that "...samples to be duplicated will be twice this amount". In actuality, the samples to be duplicated will be triple the amount because it is stated on Page 3-42 "Any time a duplicate sample is collected a split of the sample will be sent to the U.S. ACE Missouri River Division (MRD) Laboratory for QA purposes". Is it realistic to believe that this much water volume can be collected from the hydropunch?

Page 3-10, 3rd complete paragraph - The statement is made "...(volatile compounds will be sampled from the one-two foot interval directly out of the sampling device and will both be obtained from composite samples". Volatile organic compounds should not be composited.

Page 3-10, Section 3.2.3 Spill Site No. 7 (Gas Foam) (AOC 5) - What is the goal of the proposed investigation? Is one of the goals to find the disposed waste, or evaluate the surrounding area for its potential impact? If looking for the waste material itself,

investigators should consider placing more borings in the source area, but to shallower depths (10 feet). If leaching from the waste is a concern, why not evaluate surface and/or ground water in the vicinity of the pond?

Page 3-12 Figure 3.3 Spill Site No. 7 (gas foam) - Does the circle represent the pond? What does the dashed line running N-S represent?

Page 3-13 through 3-28 Section 3.2.4 Oil/Water Separators Basewide (AOC 6) - In the first paragraph of the Section, metals, pesticides and PCBs should also be noted as contaminants of concern.

Single soil borings to a maximum depth of 25 feet below grade are proposed at each oil/water separator site. Will three water samples be collected from each boring regardless of the depth at which ground water is encountered?

U.S. EPA recommends that the proposed soil borings be placed as close as possible to the oil/water separators. In at least two locations, Building 742 and Building 3172, the oil/water separators are located inside buildings. Can soil borings be advanced in these buildings (also AOC 13)?

Page 3-23, Figure 3.9 AOC 6 Oil/Water Separator at Building 3172 - Is the white-filled square depicted at Building 3173 symbolic of another oil/water separator and, if so, will it be investigated? This symbol appears to represent different features on Figures 3.5, 3.6 and 3.7. Please clarify.

Page 3-25, Building 3680 - Army Reserves Motor Pool - Is this Building 3680 or Building 3670? Please resolve.

Page 3-25, Section 3.2.5 Golf Course Maintenance/Entomology Lab, Building 1197 (AOC 7) - As previously requested, what is the surfacing material in the mixing area? Why not install a soil boring through the actual mixing area itself? Would this not be a greater area of concern relative to the proposed soil boring locations? Specifically, what groups of pesticides and herbicides will be tested for?

Page 3-26, Figure 3.11 AOC 6 Oil/Water Separator at Building 3670 - What is the hatchured area represent on this figure?

Page 3-27, Figure 3.12 Golf Course Maintenance/Entomology Lab AOC-07 - Please show the actual mixing area on this figure.

Page 3-28, Section 3.2.6 Abandoned Gas Station, Old Housing Area (AOC 8) - Regarding the proposed geophysical work, see previous comment for Page 3-4.

U.S. EPA recommends that ground water be evaluated, in addition to site soils, should the remote sensing survey prove inconclusive. In addition, although no repairs were reportedly conducted at the former gas station, U.S. EPA recommends that full scan VOC analysis be performed in addition to the proposed BTEX and lead. We also recommend that split spoon samples be collected continuously to 15 feet below grade to be certain that the base level of any existing USTs is evaluated.

Page 3-31, Table 3.6 - The word "two" in the last notation to Table 3.6 on page 3-31 should read "three ".

Page 3-32, Section 3.2.7 Spill Site No. 1, Building 3191 (AOC 9) - The CDAP provides a written description of each soil boring location relative to the old spill site; however, the given descriptions do not correspond to those shown on Figure 3.14 (Page 3-33).

Page 3-32, Section 3.2.8 Spill Site No. 2 Building 45 (AOC 10) - The text on Page 1-22 states that the fuel oil was released into a ditch. Are each of the five soil borings located in the receptor ditch? Is there a concern that Ash Creek has been impacted?

Page 3-36, Section 3.2.9 CE Storage Yard (AOC 12), last sentence - This the first mention of dense product plumes. Are DNAPLs a concern at the AOCs under investigation?

Page 3-39, Section 3.2.10 Hangar 2 (Balloon Hangar) (AOC 13) - Investigators appear to be taking a different approach (more borings, deeper tests, more sampling) to evaluating this former oil/water separator site relative to the existing oil/water separator sites (AOC 6). What is the reasoning? Do the results of the excavation of the former oil/water separator in 1993 indicate that significant contamination is present? Also, the CDAP refers to ERM 's (1992) evaluation of a nearby gas station; however, the gas station (ERM 's Site 1965?) appears to be located approximately 1,300 feet southwest of AOC 12. In addition, ERM found ground water flow to be northerly beneath the gas station, whereas the investigation in the CDAP proposes two soil borings, arranged east and west of the former oil/water separator. Please resolve.

Page 3-42, Section 3.3.5 Duplicate, Split, Rinseate, and Trip Blank Samples - The text states that a split of the duplicate samples will be sent to the U.S. Army Corps of Engineers Missouri River Division (MRD) Laboratory for QA purposes. The U.S. Army Corps of Engineers MRD Laboratory should be included in Figure 2.1, the Project Organization Chart.

Page 3-46, 1st incomplete paragraph - Why are there a "limited number of trip blank analyses allowed"? U.S. EPA recommends that <u>all</u> samples for VOC analyses should be shipped on a daily basis due to the limited holding time for VOCs.

Page 3-46, Section 3.4.1 Field Parameters - A "magnetometer " is specified in this section in connection with buried metal tanks. This is contradictory to earlier text that specified an EM31. Please clarify.

Standard Operating Procedures (SOPs) for all of the field equipment should be contained in the appendices. In addition, please add all other field equipment to this list (pH meter, specific conductivity meter, thermometer, etc.).

Page 3-48, Section 3.4.5 Sampling Containers - How will the sample bottles be "quality control analyzed " as noted in the 2nd complete sentence of the section?

U.S. EPA discourages pre-preserving the sampling containers (with the possible exception of VOCs). If a sample has an extremely high pH, it may take more preservative to reach the desired pH. Additionally, the more turbid the sample, the more preservative well have to be added as the preservative will tend to adhere to soil particles in the sample.

Page 3-52, Section 3.5 Environmental Sampling Procedures - Will the ground water samples collected for metals analysis be filtered or not?

If any of the investigation results are to be used for risk assessment purposes or for a potential Decision Document, an appropriate number of background samples must be collected for each media. With this in mind, please specify where the background samples will be collected from each media.

Regarding the statement, "All sampling locations (including soil gas locations)...." What soil gas locations? Is a soil gas survey specified somewhere in this CDAP?

Page 3-57, Section 3.6.1 Sample Identification - The water level in each bottle should be clearly marked on the outside of the bottle.

Page 3-62, Bullet #1 Procedures on Sample Shipment - Wrapping individual sample bottles in snake skin would not prevent breakage during shipment; unless, this is a trade name for something other than its literal interpretation. Please clarify.

Page 3-66, Section 3.8 Management of Investigation Derived Wastes - Since this is not a CERCLA site, the storage of investigative derived wastes (if hazardous by definition or characterization) may be subject to 90-day storage limits.

The text states that secondary containment will not be provided for each drum or pallet. Will it be provided for a group of drums or pallets?

SECTION 4.0 Analytical Methods

Page 4-1, Section 4.1.1 Priority Pollutant Metals - Why are just the PP metals being analyzed for as opposed to the U.S. EPA CLP TAL?

Page 4-4, Section 4.1.6 Volatile Organic Compounds - SOPs should be provided for *all* Methods that are modified.

Pages 4-16 through 19, Target Quantitation Limits - The quantitation limits should be either as low or lower than MCLs for each parameter. U.S. EPA has briefly reviewed the TQLs and has determined that they are above the MCL for the following parameters; vinyl chloride, antimony, beryllium, mercury, nickel, and thallium. There may be more, investigators should proof the TQLs vs. the MCLs and provide for lower detection limits.

Additionally, this table is missing the following scans; herbicides, natural attenuation parameters, gross alpha and beta, and gamma and photo emitters. Please add these parameters, the applicable methods and quantitation limits.

Page 4-23, 1st complete paragraph - There is an incomplete section number specified in this paragraph, please resolve.

Page 4-27, Section 4.5.3 Matrix Spike/Matrix Spike Duplicate - Typically, the investigators must provide extra volume of samples in order for the laboratory to perform MS/MSD analyses. This is not stated in the CDAP. This information will need to be added in the appropriate section so that the samplers are aware of this.

APPENDICES

In a typical Region 5 Quality Assurance Project Plan, all laboratory SOPs are included. This has not been done in this CDAP.